

USSN: 10/677,551

Ref. No. 27712 (formerly 01337.US1)

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Previously Presented) The method of claim 20, wherein each R^4 is independently

- (a) H,
- (b) halo,
- (c) SR^{12} ,
- (f) $S(O)_mR^{13}$,
- (g) NR^9R^{10} ,
- (h) $NR^9S(O)_mR^{13}$,
- (i) $NR^9C(=O)OR^{13}$,
- (j) phenyl optionally substituted by one or more R^8 ,
- (k) heteroaryl optionally substituted by one or more R^8 ,
- (l) cyano,
- (m) nitro,
- (n) $CONR^9R^{10}$,
- (o) CO_2R^{12} ,
- (p) $C(=O)R^{13}$,
- (q) $C(=NOR^{12})R^{13}$,
- (s) $NR^9C(=O)-R^{12}$,
- (t) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} , or
- (u) het^1 optionally substituted by one or more R^8 .

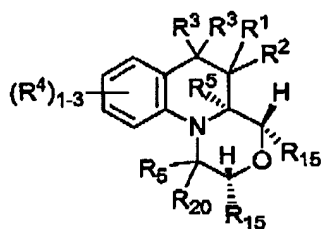
3. (Previously Presented) The method of claim 2, wherein each R^4 is independently selected from NO_2 , H, Br, F, CF_3 , CN, NH_2 , $-C(O)-OCH_3$, $-S-CH_3$, $-S(O)_2-CH_3$, $-N(OCH_3)-CH_3$, $-NH-C(O)-O-tbutyl$, $-NH-C(O)-CH_3$, heteroaryl optionally

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substituted by one or more R^8 , het¹ optionally substituted by one or more R^8 , $-S(O)_2-CH_3$, or phenyl optionally substituted by one or more of NO_2 , Cl, F, $-OCH_3$, and $-OCF_3$.

4. (Previously Presented) The method of claim 20, wherein each R^3 is H.
5. (Previously Presented) The method of claim 20, wherein R^1 is $-C(O)R^6$.
6. (Previously Presented) The method of claim 20, wherein R^2 is $-C(O)R^7$.
7. (Previously Presented) The method of claim 6, wherein R^1 is $-C(O)R^6$.
8. (Previously Presented) The method of claim 7, wherein R^6 and R^7 form $-N(R^{17})-C(O)-N(R^{17})-$ or $-N(R^{17})-C(S)-N(R^{17})-$.
- 9-10. (Canceled)
11. (Previously Presented) The method of claim 20, wherein each R^{15} is independently H, or C_{1-7} alkyl optionally substituted by one or more R^{11} substituents.
12. (Previously Presented) The method of claim 11, wherein X is $-C(H)(C_{1-4}$ alkyl)-O-C(H)(C_{1-4} alkyl)-.
13. (Previously Presented) The method of claim 20, wherein the compound has the formula of



and each R_{15} is independently

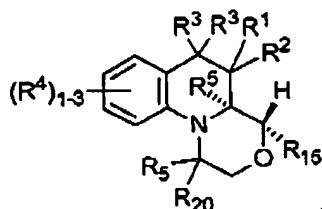
- (b) OR^{11} ,
- (d) C_{1-7} alkyl which is optionally substituted by one or more R^{11} substituents,
- (e) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} substituents.

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- (f) aryl optionally substituted by one or more R^8 , or
- (g) heteroaryl optionally substituted by one or more R^8 .

14. (Previously Presented) The method of claim 20, wherein the compound has the formula of



and each R_{15} is independently

- (b) OR^{11} ,
- (d) C_{1-7} alkyl which is optionally substituted by one or more R^{11} substituents,
- (e) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} substituents,
- (f) aryl optionally substituted by one or more R^8 , or
- (g) heteroaryl optionally substituted by one or more R^8 .

15. (Canceled)

16. (Previously Presented) The method of claim 20, wherein each R^5 is independently H or C_{1-7} alkyl.

17. (Previously Presented) The method of claim 20 wherein the compound is selected from the group consisting of:

(2R,4S,4aS)-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro- 2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

8-Bromo-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

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8-Fluoro-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-trifluoromethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,1',2, 3',4,4',4a, 6'-Octahydro-2,4',6'-trioxospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-8-carbonitrile;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-carboxamidespiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,2,4,4a-Tetrahydro-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

1,2,4,4a-Tetrahydro-1,4a-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

8-Bromo-1,2,4,4a-tetrahydro-cis-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-4'-thioxo-2',6' (1' H,3' H)-dione;

8-Bromo-1,2,4,4a-tetrahydro-cis-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' methyl, 3' methyl)-trione;

N-[1,1',2,3',4,4',4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-a]quinolone-5(6H),5'(2' H)-pyrimidin]-8-yl]acetamide;

tert-butyl 1,1',2, 3',4,4',4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-a]quinolone-5(6H),5'(2' H)-pyrimidin]-8-ylcarbamate;

8-Amino-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinolone-5(6H),5'(2' H)-pyrimidine]-2',4',6'(1' H,3' H)-trione monohydrochloride;

9-Bromo-1,2,4,4a-tetrahydro-2,4-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H), 5' (2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

8-Acetyl-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H),5'(2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

8-Ethanone-O-methyloxime-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-a]quinoline-5(6H),5'(2' H)-pyrimidine]-2',4',6' (1' H,3' H)-trione;

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1,2,4,4a-Tetrahydro-2,4-dimethyl-8-(methylsulfonyl)spiro[[1,4]oxazino [4,3-a]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-(methylsulfinyl)spiro[[1,4]oxazino [4,3-a]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-(methylthio)spiro[[1,4]oxazino[4,3-a]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-9-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1' *methyl*,3' *methyl*)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*, 3' *methyl*)-trione;

1,2, 4,4a-Tetrahydro-4-methyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,2,4,4a-Tetrahydro-2-methyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*s*)-trione;

1,1',2'3'4'4'-a-Hexahydro-2',4'-dimethyl-1,3-dioxospiro[2*H*-indene-2,5'(6'*H*)-[1,4]oxazino[4,3-*a*]quinoline]-8'-carbonitrile;

1,2,4,4a-Tetrahydro-2,4-dimethyl[1,4]oxazino[4,3-*a*]quinoline-5,5,8(6*H*)-tricarbonitrile;

8-Bromo-1,2,4-4a-tetrahydro-2,4-dimethyl[1,4]oxazino[4,3-*a*]quinoline-5,5(6*H*)-dicarbonitrile;

9-(4-Chlorophenyl)-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-9-[4-(trifluoromethoxy)phenyl]spiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,2,4,4a-Tetrahydro-9-(methoxyphenyl)-2,4-dimethylspiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

9-(3-Chloro-4-fluorophenyl)-1,2,4,4a-tetrahydro-2,4-dimethylspiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

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1,2,4,4a-Tetrahydro-2,4-dimethyl-9-(3-nitrophenyl)spiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,1',2,3',4,4',4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidin]-9-yl]benzonitrile;

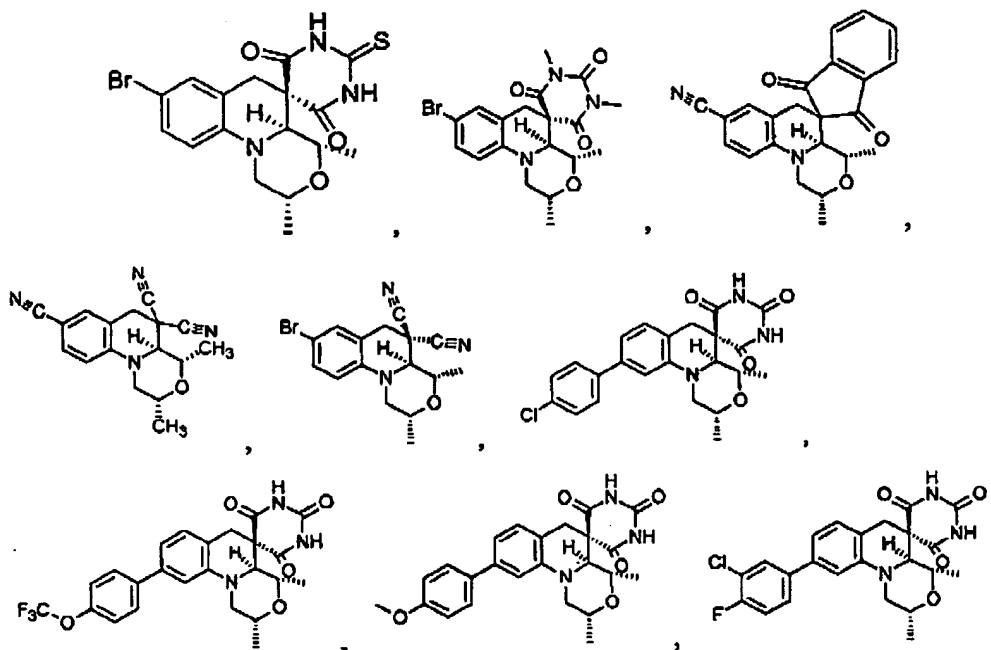
1,2,4,4a-Tetrahydro-2,4-dimethyl-9-[4-(methylsulfonyl)phenyl]spiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-9-(4-pyridinyl)spiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-2',4',6'(1'*H*,3'*H*)-trione;

Methyl-1,1'-2,3',4,4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-9-carboxylate; and

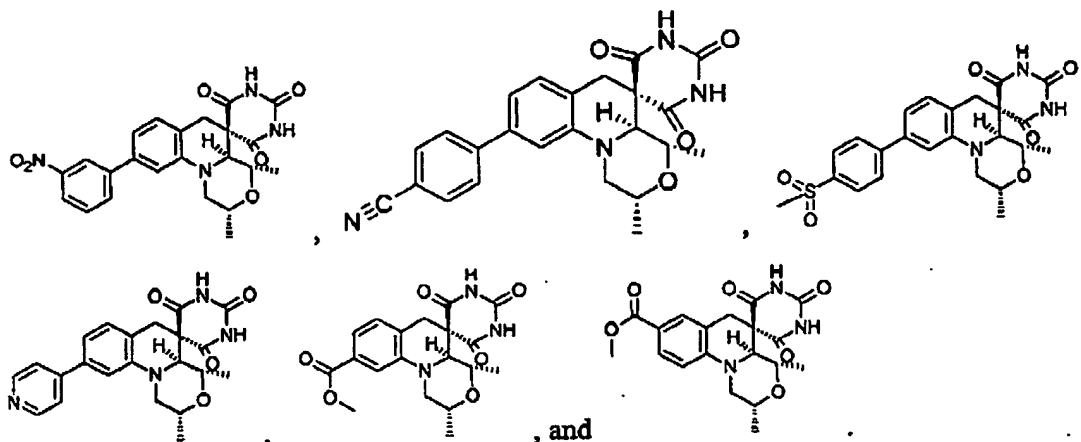
Methyl-1,1'-2,3',4,4a,6'-Octahydro-2,4-dimethyl-2',4',6'-trioxospiro[[1,4]oxazino[4,3-*a*]quinoline-5(6*H*),5'(2'*H*)-pyrimidine]-8-carboxylate.

18. (Previously Presented) The method of claim 20 wherein the compound is selected from the group consisting of:



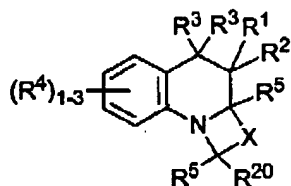
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19. (Canceled)

20. (Currently Amended) A method for the treatment of bacterial infections in mammals comprising administration of an effective amount of a compound of formula I, including enantiomeric, diastereomeric, or tautomeric isomers thereof, or any pharmaceutically acceptable salt thereof to said mammal;



I

wherein,

 R^1 is

- (a) R^{12}
- (b) $C(=O)R^6$, or
- (c) CN;

 R^2 is

- (a) R^{12}
- (b) $C(=O)R^7$,
- (c) CN,
- (d) $-CH_2-R^7$,

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- (e) $-\text{NR}^{17}\text{R}^7$,
- (f) $-\text{CH}_2\text{COR}^7$, or
- (g) $-\text{CH}_2\text{CH}_2\text{COR}^7$;

Each R^3 is independently

- (a) H,
- (b) R^{12} ,
- (c) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,
- (d) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,
- (e) aryl optionally substituted by one or more R^8 ,
- (f) heteroaryl optionally substituted by one or more R^8 ,
- (g) halo, or
- (h) both R_3 taken together are oxo;

Each R^4 is independently

- (a) H,
- (b) halo,
- (c) OR^{12} ,
- (d) $\text{OC}(=\text{O})\text{NR}^9\text{R}^{10}$,
- (e) SR^{12} ,
- (f) $\text{S}(\text{O})_m\text{R}^{13}$,
- (g) NR^9R^{10} ,
- (h) $\text{NR}^9\text{S}(\text{O})_m\text{R}^{13}$,
- (i) $\text{NR}^9\text{C}(=\text{O})\text{OR}^{13}$,
- (j) phenyl optionally substituted by one or more R^8 ,
- (k) heteroaryl optionally substituted by one or more R^8 ,
- (l) cyano,
- (m) nitro,
- (n) $\text{CONR}^9\text{R}^{10}$,
- (o) CO_2R^{12} ,
- (p) $\text{C}(=\text{O})\text{R}^{13}$,

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- (q) $C(=NOR^{12})R^{13}$,
- (r) $S(O)_mNR^9R^{10}$,
- (s) $NR^9C(=O)-R^{12}$,
- (t) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,
- (u) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,
- (v) N_3 ,
- (w) het^1 optionally substituted by one or more R^8 , or
- (x) $C(O)O-C_{1-4}alkyl-R^{12}$;

Each R^5 is independently,

- (a) H,
- (b) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,
- (c) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,
- (d) aryl optionally substituted by one or more R^8 , or
- (e) heteroaryl optionally substituted by one or more R^8 ;

R^6 and R^7 are independently;

- (a) OR^{12} ,
- (b) NR^9R^{10} ,
- (c) R^{13} , or
- (e) R^6 and R^7 together with the 2 carbons to which they are attached form cyclohexane-1,3-dione optionally substituted by one or more R^{13} , cyclopentane-1,3-dione optionally substituted by one or more R^{13} , R^6 and R^7 together form $-N(R^{17})-S(O)_m-N(R^{17})-$, $-N(R^{17})-C(O)-N(R^{17})-$, $-N(R^{17})-C(S)-N(R^{17})-$, $-N(R^{17})-N(R^{17})-$, $-N(R^{17})-C(O)-$, or $-N(R^{17})-$, or R^6 and R^7 together form a phenyl ring;

R^8 is

- (a) H,
- (b) halo,
- (c) OR^{12} ,

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- (d) OCF_3 ,
- (e) SR^{12} ,
- (f) $\text{S(O)}_m\text{R}^{13}$,
- (g) NR^9R^{10} ,
- (h) $\text{NR}^9\text{S(O)}_m\text{R}^{13}$,
- (i) $\text{NR}^9\text{C(=O)OR}^{13}$,
- (j) phenyl optionally substituted by halo, cyano, C_{1-7} alkyl, or C_{1-7} alkoxy, in the alkyl portion of the C_{1-7} alkyl and C_{1-7} alkoxy is optionally substituted by one or more R^{11} ;
- (k) heteroaryl optionally substituted by halo, C_{1-7} alkyl, or C_{1-7} alkoxy,
- (l) cyano,
- (m) nitro,
- (n) $\text{CONR}^9\text{R}^{10}$,
- (o) CO_2R^{12} ,
- (p) C(=O)R^{13} ,
- (q) $\text{C(=NOR}^{12})\text{R}^{13}$,
- (r) $\text{S(O)}_m\text{NR}^9\text{R}^{10}$,
- (s) $\text{NR}^9\text{C(=O)-R}^{12}$,
- (t) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more R^{11} ,
- (u) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} ,
- (v) $-\text{C(O)H}$, or
- (w) $-\text{het}^1$;

R^9 and R^{10} are independently

- (a) H,
- (b) OR^{12} ,
- (c) aryl optionally substituted by one or more R^{14} ,
- (d) heteroaryl optionally substituted by one or more R^{14} ,
- (e) C_{1-7} alkyl which is optionally substituted by one or more R^{11} ,

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- (f) C_{3-8} cycloalkyl which is optionally substituted by one or more R^{11} ,
(g) $(C=O)R^{13}$, or
(h) R^9 and R^{10} together with the nitrogen to which they are attached form morpholine, pyrrolidine, piperidine, thiazine, piperazine, each of the morpholine, pyrrolidine, piperidine, thiazine, piperazine being optionally substituted with R^{11} ;

 R^{11} is

- (a) oxo,
(b) phenyl optionally substituted by one or more R^{14} ,
(c) OR^{12} ,
(d) SR^{12} ,
(e) $NR^{12}R^{12}$,
(f) halo,
(g) CO_2R^{12} ,
(h) $CONR^{12}R^{12}$,
(i) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by one or more oxo, halo, OR^{12} , SR^{12} , C_{1-7} alkyl, or $NR^{12}R^{12}$ substituents, or
(j) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more oxo, halo, OR^{12} , SR^{12} , C_{1-7} alkyl, or $NR^{12}R^{12}$ substituents;

 R^{12} is

- (a) H,
(b) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by oxo, halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents,
(c) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more oxo, halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents,
(d) aryl optionally substituted by one or more halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents, or
(e) heteroaryl optionally substituted by one or more halo, C_{1-7} alkyl, or C_{1-7} alkoxy substituents;

 R^{13} is

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- (a) C₁₋₇ alkyl which is optionally substituted by one or more by oxo, halo, carboxyl, C₁₋₇alkyl, or C₁₋₇alkoxy substituents,
- (b) C₃₋₈ cycloalkyl, C₃₋₈ cycloalkenyl or C₃₋₈ cycloalkynyl each of which is optionally substituted by one or more by oxo, halo, C₁₋₇alkyl, or C₁₋₇alkoxy substituents,
- (c) aryl optionally substituted by one or more halo, C₁₋₇alkyl, or C₁₋₇alkoxy substituents;
- (d) heteroaryl optionally substituted by one or more halo, C₁₋₇alkyl, or C₁₋₇alkoxy substituents, or

(e) -C(O)OH

R¹⁴ is

- (a) H,
- (b) halo,
- (c) C₁₋₇alkyl,
- (d) OR¹²,
- (e) OCF₃,
- (f) SR¹²,
- (g) S(O)_mR¹³,
- (h) NR¹²R¹²,
- (i) NR¹²S(O)_mR¹³,
- (j) NR¹²C(=O)OR¹³,
- (k) phenyl optionally substituted by halo, C₁₋₇alkyl, or C₁₋₇alkoxy,
- (l) heteroaryl optionally substituted by halo, C₁₋₇alkyl, or C₁₋₇alkoxy,
- (m) cyano,
- (n) nitro,
- (o) CONR¹²R¹²,
- (p) CO₂R¹²,
- (q) C(=O)R¹³,
- (r) C(=NOR¹²)R¹³,
- (s) S(O)_mNR¹²R¹²,
- (t) NR⁹C(=O)-R¹²,

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(u) C_{1-7} alkyl, C_{1-7} alkenyl or C_{1-7} alkynyl each of which is optionally substituted by oxo, halo, OR^{12} , SR^{12} , C_{1-7} alkyl, or $NR^{12}R^{12}$ substituents, or

(v) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by oxo, halo, OR^{12} , SR^{12} , C_{1-7} alkyl, or $NR^{12}R^{12}$ substituents;

X is $-C(R^{15})_2-O-C(R^{15})_2-$;

Each R^{15} is independently

(a) H,

(b) OR^{11} ,

(d) C_{1-7} alkyl which is optionally substituted by one or more R^{11}

substituents,

(e) C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} substituents,

(f) aryl optionally substituted by one or more R^8 , or

(g) heteroaryl optionally substituted by one or more R^8 ;

R^{16} is

— (a) — H

— (b) — OR^{12} ;

— (c) — $(C=O)R^{12}$;

— (d) — $(C=O)OR^{12}$;

— (e) — $(C=O)NR^9R^{10}$;

— (f) — $S(O)_mR^{12}$;

— (g) — $S(O)_mNR^9R^{10}$;

— (h) — C_{1-7} alkyl which is optionally substituted by one or more R^{11}

substituents,

— (i) — C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl or C_{3-8} cycloalkynyl each of which is optionally substituted by one or more R^{11} substituents,

— (j) — aryl optionally substituted by one or more R^8 , or

— (k) — heteroaryl optionally substituted by one or more R^8 ;

R^{17} is

(a) H,

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(b) -OH, or

(c) C₁₋₄alkyl;R¹⁹ is~~_____ (a) H,~~~~_____ (b) OR¹¹;~~~~_____ (c) Oxo;~~~~_____ (d) C₁₋₇alkyl which is optionally substituted by one or more R¹¹~~~~substituents;~~~~_____ (e) C₃₋₈cycloalkyl, C₃₋₈cycloalkenyl or C₃₋₈cycloalkynyl each of which is optionally substituted by one or more R¹¹ substituents;~~~~_____ (f) aryl optionally substituted by one or more R⁸, or~~~~_____ (g) heteroaryl optionally substituted by one or more R⁸;~~R²⁰ is

(a) H,

(b) C₁₋₇ alkyl, C₁₋₇ alkenyl or C₁₋₇ alkynyl each of which is optionally substituted by one or more R¹¹,(c) C₃₋₈ cycloalkyl, C₃₋₈ cycloalkenyl or C₃₋₈ cycloalkynyl each of which is optionally substituted by one or more R¹¹,(d) aryl optionally substituted by one or more R⁸, or(e) heteroaryl optionally substituted by one or more R⁸, or(f) ~~R²⁰ and R¹⁹, taken together, form CH₂;~~

wherein, "aryl" denotes a phenyl radical or an ortho-fused bicyclic carbocyclic radical having about nine to ten ring atoms in which at least one ring is aromatic;

wherein, "heteroaryl" encompasses a radical attached via a ring carbon or ring nitrogen of a monocyclic aromatic ring containing five or six ring atoms consisting of carbon and 1, 2, 3, or 4 heteroatoms, selected from oxygen (-O-), sulfur (-S-), sulfinyl (S=O) and sulfonyl (S(=O)₂), or nitrogen N(Z) wherein Z is absent or is H, O, C₁₋₄alkyl, phenyl or benzyl, or a radical of an ortho-fused bicyclic heterocycle of about eight to ten ring atoms derived therefrom;

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het¹ is a C- or N- linked five- (5), six- (6), seven- (7), or eight- (8) membered mono- or bicyclic ring, each mono- or bicyclic ring being fully saturated or partially unsaturated, and having 1-4 heteroatoms selected from the group consisting of oxygen, sulfur, and nitrogen; het¹ being optionally substituted by 1-2 substituents selected from C₁-C₄alkyl, amino, C₁-C₄alkylamino, C₁-C₄alkyloxy, halogen -CN, =O, and =S; and

each m is independently 0, 1, or 2; and

~~each n is independently 1, 2, or 3.~~

21. (Previously Presented) The method of claim 20 wherein said compound is administered to the mammal orally, parenterally, transdermally, or topically in a pharmaceutical composition.

22. (Original) The method of claim 20 wherein said compound is administered in an amount of from about 0.1 to about 100 mg/kg of body weight/day.

23. (Original) The method of claim 20 wherein said compound is administered in an amount of from about 1 to about 50 mg/kg of body weight/day.

24-25. (Canceled)

26. (Previously Presented) The method of claim 20 wherein the composition comprises an enantiomerically enriched form of a compound of formula I.

27. (Previously Presented) The method of claim 26, wherein the composition comprises at least 50% of one enantiomer of a compound of formula I relative to the other enantiomer of the compound.

28. (Previously Presented) The method of claim 27, wherein the composition comprises at least 80% of one enantiomer of a compound of formula I relative to the other enantiomer of the compound.

29. (Previously Presented) The method of claim 27, wherein the composition comprises at least 90% of one enantiomer of a compound of formula I relative to the other enantiomer of the compound.

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30. (Previously Presented) The method of claim 20 wherein the compound is selected from the group consisting of:

(2S,4R,4aR)-4-isopropyl-2-methyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-diethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-8-acetyl-9,10-difluoro-2,4-dimethyl-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-10-fluoro-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-dimethyl-8-[5-(trifluoromethyl)-1,2,4-oxadiazol-3-yl]-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

1,2,4,4a-Tetrahydro-2,4-dimethyl-8-nitrospiro[[1,4]oxazino[4,3-a]quinoline-5(6H),5'(2'H)-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2S,4R,4aR)-2-isopropyl-4-methyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2S,4R,4aR)-2-isopropyl-4-methyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-diisopropyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-dimethyl-8-(3-methyl-1,2,4-oxadiazol-5-yl)-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2S,4R,4aR)-8-acetyl-10-fluoro-2,4-dimethyl-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

8-bromo-2,4-dimethyl-10-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

(2R,4S,4aS)-2,4-dimethyl-8-(5-methyl-1,2,4-oxadiazol-3-yl)-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

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(2S,4S,4aS)-4-methyl-8-nitro-2-(trifluoromethyl)-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione;

4-azido-3-iodobenzyl (2R,4S,4aS)-2,4-dimethyl-2',4',6'-trioxo-1,1',2,3',4,4',4a,6'-octahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-8-carboxylate; and

(2S,4S,4aS)-2,4-dimethyl-8-nitro-1,2,4,4a-tetrahydro-2'H,6H-spiro[1,4-oxazino[4,3-a]quinoline-5,5'-pyrimidine]-2',4',6'(1'H,3'H)-trione.

31. (Previously Presented) The method of claim 20 wherein:
when each R_4 is H, that R_1 and R_2 are not simultaneously H, CN, or $-C(O)-OCH_3$
or that R_1 is not CN and R_2 is not $-C(O)-OC_{1-4}$ alkyl.

32. (Previously Presented) The method of claim 20 wherein the compound of formula I is administered as a pharmaceutical composition, wherein the pharmaceutical composition additionally comprises a pharmaceutically acceptable carrier.

33. (Previously Presented) The method of claim 4 wherein:
 R^1 is $-C(O)R^6$;
 R^2 is $-C(O)R^7$;
each R^4 is independently selected from H, F and heteroaryl optionally substituted by one or more R^8 ;
each R^5 is H;
 R^6 and R^7 form $-N(R^{17})-C(O)-N(R^{17})-$;
each R^{17} is H;
 R^{20} is H; and
X is $-C(H)(C_{1-4}$ alkyl)-O-C(H)(C_{1-4} alkyl)-.

34. (Previously Presented) The method of claim 33 wherein R^8 is C_{1-7} alkyl.

35. (Previously Presented) The method of claim 13 wherein:
 R^1 is $-C(O)R^6$;
 R^2 is $-C(O)R^7$;
each R^3 is H;

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each R^4 is independently selected from H, F and heteroaryl optionally substituted by one or more R^8 ;

each R^5 is H;

R^6 and R^7 form $-N(R^{17})-C(O)-N(R^{17})-$;

each R^{15} is C_{1-7} alkyl;

each R^{17} is H; and

R^{20} is H.

36. (Previously Presented) The method of claim 35 wherein R^8 is C_{1-7} alkyl.

37. (Previously Presented) The method of claim 13 wherein:

R^1 is $-C(O)R^6$;

R^2 is $-C(O)R^7$;

each R^3 is H;

each R^4 is independently selected from H, halo, and heteroaryl optionally substituted by one or more R^8 ;

each R^5 is H;

R^6 and R^7 form $-N(R^{17})-C(O)-N(R^{17})-$;

each R^{15} is C_{1-7} alkyl;

each R^{17} is H; and

R^{20} is H.